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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/758,611	01/14/2004	David A. Stewart	ARC-14743-1	7529
25186 7590 08/20/2009 NASA AMES RESEARCH CENTER ATTN: PATENT COUNSEL MAIL STOP 202A-4 MOFFETT FIELD, CA 94035-1000				
EXAMINER				
LANGMAN, JONATHAN C				
ART UNIT		PAPER NUMBER		
1794				
NOTIFICATION DATE		DELIVERY MODE		
08/20/2009		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

vickie.l.kent@nasa.gov

### Office Action Summary

**Application No.**

10/758,611

**Applicant(s)**

STEWART ET AL.

**Examiner**

JONATHAN C. LANGMAN

**Art Unit**

1794

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 August 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 4.9-12 and 48 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4.9-12 and 48 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/5508)  
Paper No(s)/Mail Date 8/4/2009
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**  
***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 4, 9-12, and 48 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claim 48, The Examiner can not find, and the applicant has not shown sufficient support for the subject matter of claim 48 for the following reasons:

a). as admitted by the applicant and shown in the instant specification at paragraphs ([0012] and ([0026])), the first layer is not supported to contain tantalum disilicide.

b.) the claimed percentages of the first and second layer are not supported within the specification. It seems that the applicant has somehow switched the orders of the first and second layers, with regards to their percentage compositions (see [0026] of the instant specification).

c.) the new limitation of choosing the compositions of a combination of the first and second layers so that a CTE of the combination matches the CTE of the substrate

is not supported within the specification. As seen in paragraph [0026] the applicant is only supported for the composition of the sub layer having a CTE that matches the CTE of the substrate.

Regarding claims 4, and 9-12, these claims are rejected for being dependent upon a base rejected claim.

### ***Response to Arguments***

The applicants agreed with the Examiner in the last office action, however failed to properly amend the claims. Therefore, the previous grounds of rejection, consistent with the instant office action, are maintained.

The Examiner has attempted several times to guide the applicant in a direction that would lead them towards producing a claim that is supported by the specification. In furtherance thereof, the Examiner proposes a new claim, below, that mirrors the pending claims and is supported by the specification, specifically at paragraphs ([0012] and [0026]).

#### **EXAMINER PROPOSED NEW CLAIM:**

"A composite structure, comprising:

a porous substrate, having a lower surface and an upper surface and comprising a selected substrate material and having a substrate coefficient of thermal expansion;

a first layer integrated with an exposed surface of the substrate, wherein the first layer material comprises between 20 percent and 60 percent

molybdenum disilicide, between 40 percent and 80 percent borosilicate glass and a processing aid, with the first layer being positioned adjacent to and between the substrate upper surface and a second layer having a material composition different from the first layer;

wherein the second layer material comprises between 5 percent and 70 percent tantalum disilicide, between 5 percent and 30 percent molybdenum disilicide, and between 10 percent and 95 percent borosilicate glass;

wherein a composition of the first layer is chosen so that a coefficient of thermal expansion of the first layer is approximately the same as the coefficient of thermal expansion of the substrate; and

wherein the combined first and second layers provide a protective layer when exposed to temperatures around 3000° F.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JONATHAN C. LANGMAN whose telephone number is (571)272-4811. The examiner can normally be reached on Mon-Thurs 8:00 am - 6:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on 571-272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JCL

/Timothy M. Speer/  
Primary Examiner, Art Unit 1794